PART IV. ANALYSIS OF STRUCTURAL COMPONENTS FOR DYNAMIC LOADS

Calculations for Strength (Cont.) SOV/1376

Savel'yev, L.I., Candidate of Technical Sciences. Complete Diagram of Fatigue Strength and the Effect of Tangential Stress in Strength Calculations 347

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Savel'yev, L.I., Candidate of Technical Sciences. Complete Diagram of Fatigue Strength and the Effect of Tangential Stress in Strength Calculations 347

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24(6) PHASE I BOOK EXPLOITATION SOV/2397

Ponomarev, S.D., V.L. Biderman, K.K. Likharev, V.M. Makushin, N.N. Malinin, and V.L. Feodos'yev

Raschety na prochnost' v machinostroyenii. t. II: Nekotoryye zadachi prikladnoy teorii uprugosti. Raschety za predelami uprugosti. Raschety na polzuchest' (Design for Strength in Machinery Construction. Vol 2: Some Problems in the Applied Theory of Elasticity. Calculation Beyond Elastic Limits. Design for Creep) Moscow, Mashgiz, 1958. 974 p. Errata slip inserted. 15,000 copies printed.

Ed.: S.D. Ponomarev, Doctor of Technical Sciences, Professor; Ed. of Publishing House: N.P. Chernysheva; Tech. Ed.: B.N. Model'; Managing Ed. for Literature of Heavy Machine Building (Mashgiz): S.Ya. Golovin, Engineer.

PURPOSE: The book is intended for engineers, designers, and process engineers in the field of machinery design and construction. It may also be useful to students, aspirants, and scientific workers.

Card 1/17

COVERAGE: This book deals with some problems of the applied theory of elasticity and the calculation of plastic deformation and creep. Design methods for circular and rectangular plates, shells of rotation, and thick-walled tubes are presented. The theory of contact stresses, the design of structural elements made of rubber and rubberized cord, calculations of elastoplastic strains, and calculations of steady and unsteady states of creep are discussed. No personalities are mentioned. References follow each chapter.

TABLE OF CONTENTS:

BIDERMAN, V.L., kand.tekhn.nauk

Determining the tension of steel ropes rolled on drums of freight elevators. Rasch.na prochn. no.2:47-54 '58. (MIRA 12:2)

(Wire rope)

BIDERMAN, V.L., kand.tekhn.nauk

Designing parts made of rubber. Rasch. na prochn. no.3:40-87 '58.
(MIRA 12:2)
(Rubber goods)

AUTHORS: Biderman, V. L., Pugin, V. A. SOV/32-24-7-41/65

TITLE: A Wire Gauge for the Measuring of Substantial Deformations (Provolochnyy datchik dlya izmereniya bol'shikh deformatsiy)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol. 24, Nr 7, pp. 874 - 875 (USSR)

ABSTRACT: The usual wire-resistance gauges make possible measurements of deformations up to 1 - 2%, while for measurements of greater plastic deformations of non-metallic materials amounting to several ten percents a special gauge is described in the present paper. It consists of a rubber piece of a diameter of 1-1,5 mm, onto which a thin constantan wire is wound, with a rubber being extended while the wire is being wound onto it; thus, the wire is stretched. This gauge is then stuck to the test piece to be investigated in the direction of the deformation to be measured; thus, it is deformed simultaneously. Hence the electric resistance of the wire changes, which then is measured. This device makes it possible to measure deformations of up to ± 15%, with the sensitivity depending on the method of production of the gauge. The tests carried out with the rubber and canvas of pneumatic tires showed that the gauges have a high mechanical

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A Wire Gauge for the Measuring of Substantial Deformations

resistance and can be used several times. There is 1 figure.

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti (Scientific Research Institute of Tire Industry)

[redacted], V.I., kand.tekhn.nauk

Deferential equations of the deformations of rubber-cord shells of revolution. [Trudy] MVTU no.99:119-146 '61. (MIRA 15:7)
(Elastic plates and shells) (Rubber goods)

BIDERMAN, V. L.: Doc Tech Sci (diss) -- "The computation of rubber-metal and rubber-cord parts of machines". Moscow, 1959. 19 pp (Inst of Machine Science of the Acad Sci USSR), 150 copies (KL, No 15, 1959, 115)

PONOMAREV, Sergey Dmitriyevich, prof., doktor tekhn.nauk, zasluzhennyy deyatel' nauki i tekhniki; BIDERMAN, Vadim L'vovich; LIKHAREV, Konstantin Konstantinovich; MAKUSHIN, Vladimir Mikhaylovich; MALININ, Nikolay Nikolayevich; FEODOS'YEV, Vsevolod Ivanovich; CHERNYSHOVA, N.P., red.izd-va; MODEL', B.I., tekhn.red.

[Strength analysis in machine manufacturing] Raschety na prochnost' v mashinostroenii. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit. lit-ry. Vol.3. [Inertia loads. Vibrations and impact loads. Strength. Stability.] Inertsionnye nagruzki. Kolebaniia i udarnye nagruzki. Vynoslivost'. Ustoichivost'. Pod red. S.D.Ponomareva. 1959. 1118 p. (MIRA 12:12)

(Machinery--Design)

15(9) SOV/63-4-1-16/31

AUTHOR: Biderman, V.L.

TITLE: Some Problems of Calculating and Designing Pneumatic Tires (Nekotoryye problemy raschëta i konstruirovaniya pnevmaticheskikh shin)

PERIODICAL: Khimicheskaya nauka i promyshlennost', 1959, Vol 4, Nr 1, pp 111-114 (USSR)

ABSTRACT: The operation properties of a tire are determined by its static and fatigue resistance, the heat-formation in the tire, and its operation at high speed. The fatigue resistance depends on the stresses and deformations during operations. These are studied by theoretical calculations and by experiment. A pneumatic tire is a complicated system (Figure 1). The intersecting rubber and cord layers have pronounced anisotropic elastic properties. The non-homogeneity of the tire must be taken into consideration. The pliability of a rubber-cord structure depends on the direction of the stretching (Figure 3). Methods have been developed for the calculation of an equilibrium configuration by means of special nomograms [Ref 2]. Experimental investigation of deformations is of utmost importance [Ref 1, 8, 9]. The deformation of the rubber and the cord ranges from parts of a per-

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Some Problems of Calculating and Designing Pneumatic Tires

cent to several dozen percents. Special transducers are used in the experiments which have a small rigidity but sustain deformations of 20 - 30%. A rubber-wire transducer (Figure 5) consisting of a 1 - 1.5 mm rubber thread with a 0.015 mm constantan wire wound on it has shown the best results. It is glued on the tire in the direction of the measured deformation. The electric resistance changes with the deformation and can be measured on an oscillogram. Figure 6 shows the deformation curves of a viscose cord in the truck tire 260-20 during slow rolling on an even surface. The shear deformation of the rubber between the cord threads reaches 30 - 40% (Figure 7). The distribution of the maximum and minimum deformations in the cord threads of the first layer of the truck tire 260-20 on asphalt and cobblestone pavement at a speed of 30 km/h are given in Figure 9. The various deformations are interdependent. If the rigidity of the tire tread is increased, its

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Some Problems of Calculating and Designing Pneumatic Tires

deformations are reduced, but the deformations of the cord threads rise.
There are 4 diagrams, 5 graphs, 1 photo and 10 references, 6 of which are Soviet, 2 English, 1 Canadian and 1 German.

PHASE I BOOK EXPLOITATION SOV/3862

Raschety na prochnost': teoreticheskiye i eksperimental'nyye issledovaniya prochnosti mashinostroitel'nykh konstruktsiy; sbornik statey, vyp. 5 (Strength Analysis; Theoretical and Experimental Investigations of the Strength of Machine Elements; Collection of Articles, No. 5) Moscow, Mashgiz, 1960. 298 p. Errata slip inserted. 5,000 copies printed.

Ed.: V.N. Arbuzov, Candidate of Technical Sciences; Ed. of Publishing House: L.N. Danilov; Tech. Ed.: B.I. Model'; Managing Ed. for Literature on General Technical and Transport Machine Building (Mashgiz): A.P. Kozlov, Engineer; Editorial Board: G.S. Glushkov, Doctor of Technical Sciences, Professor; V.M. Makushin, Candidate of Technical Sciences, Docent (Secretary); S.D. Ponomarev, Honored Scientist and Technologist of the RSFSR, Doctor of Technical Sciences, Professor; S.V. Serensen, Member of the Academy of Sciences UkrSSR, Doctor of Technical Sciences, Professor; S.N. Sokolov, Doctor of Technical Sciences, Professor; N.D. Tarabasov, Doctor of Technical Sciences, Professor; and Ye.N. Tikhomirov, Honored Scientist and Technologist of the RSFSR, Professor (Chairman).

Card 1/8

PURPOSE: The book is intended for engineers and scientists specializing in stress analysis.

COVERAGE: This collection of 15 articles deals with the design and calculation of machine elements for strength, rigidity, and stability. The collection is divided into three sections; 1) calculation for strength, 2) stress and strain analysis, and 3) calculation for stability. Methods and formulas for calculating strength parameters are presented. No personalities are mentioned. References follow several of the articles.

TABLE OF CONTENTS:

SECTION I. DESIGN OF PARTS FOR STRENGTH AND RIGIDITY

SECTION III. CALCULATIONS FOR DYNAMIC LOAD AND FOR STABILITY OF CONSTRUCTIONAL ELEMENTS

Strength Analysis (Cont.) SOV/3862

Values for critical speeds of a rotating shaft are derived and the effects of deflecting forces analyzed.

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S/138/60/000/007/004/010
A051/A029

AUTHOR: Biderman, V.L.

TITLE: Tires With a Meridional Distribution of the Cord Threads in the Casing

PERIODICAL: Kauchuk i Rezina, 1960, No. 7, pp. 10 - 12

TEXT: The new "P" ("R")-type tire with meridional thread distribution was previously described in Reference 1. The present article deals with the special features of these tires as compared to ordinary ones with the cord layers arranged in a criss-cross fashion. Figure 1 shows that the casing layers and that of the first breaker represent diagonals of rhombs, which are formed by the layers of the upper breakers. Thus the tire casing resembles a non-expanding circular band, which behaves in a caterpillar-like fashion when the tire rolls on a flat surface. The shifting of each point on the casing, relative to the road, is considerably less than in ordinary-type tires. The author describes how the tire casing bears stresses resulting from internal pressure and how this stress is distributed between the two thread systems of the tread (the meridional main layers and those at an angle to the breakers). The outer diameter of the tire strives to expand since there is no connection between the meridional threads in a circular direction.

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Tires With a Meridional Distribution of the Cord Threads in the Casing

Actually, the diameter expansion is limited in the "R"-type tire due to the presence of a wide-angle breaker, and the casing layers weigh upon the breaker ring (Figs. 2 and 3). The interaction between the breaker and the casing under a load caused by internal pressure of the tire with meridian-directed threads is shown in Figure 4. A description of the load distribution between the casing and the breaker, which, in turn, depends upon the angle between the breaker threads and the meridian along the crown. Reference is made again to Figure 3, where the internal pressure load distribution between the casing and breaker of the meridional thread tire is shown schematically. The authors refers to a previous theory (Ref. 2) for calculating the shape at each section of the tire. The angle between the tread threads of the breaker and the meridian is 70 degrees in the "R" tire, in which case significant deformations of the breaker in the direction of the meridian cause only slight changes of the circular dimensions ($|\varepsilon_m/\varepsilon_\perp| = \mathrm{tg}^2\beta$). The author points out that the schematic stress distribution given in Figure 3 would not hold true since in reality the meridional force in the breaker is slight by comparison with the circular one, and thus the forces in the rubber cannot be ignored as compared to the forces in the breaker threads (in the direction of the

Tires With a Meridional Distribution of the Cord Threads in the Casing

meridian). Figure 5 is a nomogram for the determination of the equilibrium tire shape at $\beta = 0$. The formula for determining the force on the tread threads N which is constant along their entire length is given as

$$N = \pi p \frac{R^2 - r_0^2}{\nu},$$

where p is the pressure, R - the casing radius along the crown, r_0 - the distance from the point of the greatest width of the contour, ν - the total number of threads in the casing tread. Formulae for N' and T are also given, where N' is the force in the threads of the breaker and T are the forces in the outer tire ring. From the latter it is seen that the outer tire ring forces T are greater by 30 - 40% than in a similar tire of ordinary design. In summarizing the performance of the "R" tire, the author found that the cord has easier operation conditions in spite of the substantial cord saving. On the other hand, the operation of the rubber in the lateral zone and that of the side rings is more difficult. There are 4 diagrams, 1 illustration and 2 Soviet references.

ASSOCIATION: Moskovskoye Vyssheye Tekhnicheskoye Uchilishche im. Baumana (The Moscow Technical High School im. Bauman)

SLYUDIKOV, L.D.; BIDERMAN, V.L.

New method of mounting tire casings. Kauch.i rez. 19 no.8: 45-46 Ag '60. (MIRA 13:9)

1. Moskovskiy shinnyy zavod i Moskovskoye vysshoye Tekhnicheskoye uchilishche im. Baumana.
(Tires, Rubber)

S/179/60/000/006/028/036
E081/E135

AUTHORS: Biderman, V.L., and Bukhin, B.L., (Moscow)

TITLE: Equilibrium of Rubber-Cord Cylindrical Shells

PERIODICAL: Izvestiya Akademii nauk SSSR,Otdeleniye tekhnicheskikh nauk, Mekhanika i mashinostroyeniye, 1960, No. 6, pp. 156-158

TEXT: The paper is a continuation of previous work in which (Refs 1, 2) the differential equilibrium equation of a rubber-cord shell of revolution was obtained, neglecting bending strains. In the present paper, the equation for a cylindrical rubber-cord shell is derived, taking into account the energy of the rubber and the bending strains in the rubber-cord wall. It is assumed that the fibres of the cords are inextensible for membrane deformations. The notation is the same as in the earlier paper (Ref.2). All relations for a cylindrical shell can be obtained from those for a shell of revolution (Ref.2) if it is assumed that the distance r from the axis of revolution is infinite, and in place of the central angle θ a new coordinate is taken as the distance on the generators of the cylinder, so that $dx = rd\theta$. The profile

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Equilibrium of Rubber-Cord Cylindrical Shells

of the cylindrical shell is a circle; the angle of elevation of the cord filaments β and the density of the fibres i is identical at all points. The total potential energy of the shell is written as the sum of the following energy terms:
energy of external forces;

$$U = -\iint (Q_n w + Q_m v + Q_t u)\, ds\, dx \qquad (1)$$

energy of the compressed air;

$$W_1 = \frac{1}{2} p \iint \left\{ w \frac{\partial w}{\partial x} - w \frac{\partial u}{\partial x} + w \frac{\partial v}{\partial s} - v \frac{\partial w}{\partial s} + p \left[\left(\frac{\partial w}{\partial s}\right)^2 + i \left(\frac{\partial v}{\partial s}\right)^2 + \left(\frac{\partial u}{\partial s}\right)^2 \right] + \right.$$
$$\left. + p \operatorname{tg}^2 \beta \left[\left(\frac{\partial w}{\partial x}\right)^2 + \left(\frac{\partial v}{\partial x}\right)^2 + \left(\frac{\partial u}{\partial x}\right)^2 \right] \right\} ds\, dx \qquad (2)$$

energy of membrane deformation of the rubber;

$$W_3 = \iint 2 G_p h^* (1 - \operatorname{tg}^2 \beta + \operatorname{tg}^4 \beta) \left(\frac{\partial u}{\partial x}\right)^2 ds\, dx \qquad (3)$$

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Equilibrium of Rubber-Cord Cylindrical Shells

deformation energy of the cord filaments in bending;

$$W_4 = \iint \frac{1}{2} E_k i \Sigma y^2 \cos^4 \beta \left[\left(\frac{\partial^2 w}{\partial s^2} - \frac{1}{\rho} \frac{\partial v}{\partial s} + \frac{\partial^2 w}{\partial x^2} \operatorname{tg}^2 \beta \right)^2 + 4 \left(\frac{\partial^2 w}{\partial s \partial x} - \frac{1}{2\rho} \frac{\partial v}{\partial x} \right)^2 \operatorname{tg}^2 \beta \right] ds\, dx \quad (4)$$

deformation energy of the rubber in bending;

$$W_5 = \iint \frac{2}{3} G_p (h_1^3 + h_2^3) \left[\left(\frac{\partial^2 w}{\partial s^2} - \frac{1}{\rho} \frac{\partial v}{\partial s} \right)^2 + \left(\frac{\partial^2 w}{\partial x^2} \right)^2 + \frac{\partial^2 w}{\partial x^2} \left(\frac{\partial^2 w}{\partial s^2} - \frac{1}{\rho} \frac{\partial v}{\partial s} \right) + 3 \left(\frac{\partial^2 w}{\partial s \partial x} - \frac{1}{\rho} \frac{\partial v}{\partial x} \right)^2 \right] ds\, dx \quad (5)$$

The assumption of inextensible cord filaments leads to:

$$\left(\frac{\partial v}{\partial s} + \frac{w}{\rho} \right) \cos^2 \beta + \frac{\partial u}{\partial x} \sin^2 \beta = 0, \qquad \frac{\partial u}{\partial s} + \frac{\partial v}{\partial x} = 0 \quad (6)$$

connecting the displacements. The dimensionless coordinates

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Equilibrium of Rubber-Cord Cylindrical Shells

φ ($\varphi = s/\rho$) and ψ ($\psi = x/\rho$) and the function Z are introduced; they are expressed in terms of the displacements by:

$$u = \rho \frac{\partial Z}{\partial \psi}, \quad v = -\rho \frac{\partial Z}{\partial \varphi}, \quad w = \rho \left(\frac{\partial^2 Z}{\partial \varphi^2} - \frac{\partial^2 Z}{\partial \psi^2} tg^2 \beta \right) \qquad (7)$$

Eq.(6) is satisfied identically and the equilibrium equation for the cylinder is then expressed as an 8th order partial differential equation with constant coefficients:

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Equilibrium of Rubber-Cord Cylindrical Shells

$$-(A_2+A_3)\frac{\partial^8 Z}{\partial\varphi^8}-[4\operatorname{tg}^2\beta A_2+2(1-\operatorname{tg}^2\beta)A_3]\frac{\partial^8 Z}{\partial\varphi^6\partial\psi^2}+$$
$$+[10\operatorname{tg}^4\beta A_2-(1-4\operatorname{tg}^2\beta+\operatorname{tg}^4\beta)A_3]\frac{\partial^8 Z}{\partial\varphi^4\partial\psi^4}-[4\operatorname{tg}^6\beta A_2+$$
$$+2\operatorname{tg}^2\beta(\operatorname{tg}^2\beta-1)A_3]\frac{\partial^8 Z}{\partial\varphi^2\partial\psi^6}-\operatorname{tg}^4\beta(\operatorname{tg}^4\beta A_2+A_3)\frac{\partial^8 Z}{\partial\psi^8}+$$
$$+2(1-2A_2-2A_3)\frac{\partial^6 Z}{\partial\varphi^6}-[\operatorname{tg}^2\beta+8\operatorname{tg}^2\beta A_2+(3-2\operatorname{tg}^2\beta)A_3]\frac{\partial^6 Z}{\partial\varphi^4\partial\psi^2}- \quad (8)$$
$$-(\operatorname{tg}^4\beta-10\operatorname{tg}^4\beta A_2-3\operatorname{tg}^2\beta A_3)\frac{\partial^6 Z}{\partial\varphi^2\partial\psi^4}+\operatorname{tg}^6\beta\frac{\partial^6 Z}{\partial\psi^6} \quad (8)$$
$$+(1-A_2-A_3)\frac{\partial^4 Z}{\partial\varphi^4}+(1-3\operatorname{tg}^2\beta-4\operatorname{tg}^2\beta A_2-A_3)\frac{\partial^4 Z}{\partial\varphi^2\partial\psi^2}-$$
$$-(3\operatorname{tg}^2\beta+A_1)\frac{\partial^4 Z}{\partial\psi^4}=\frac{1}{p}\left(-\frac{\partial^2 Q_n}{\partial\varphi^2}+\frac{\partial^2 Q_n}{\partial\psi^2}\operatorname{tg}^2\beta-\frac{\partial Q_m}{\partial\varphi}+\frac{\partial Q_l}{\partial\psi}\right)$$

Здесь:

$$A_1=\frac{4G_p h^*}{pp}(1-\operatorname{tg}^2\beta+\operatorname{tg}^4\beta),\qquad A_2=\frac{E_k i\Sigma y^3}{pp^3}\cos^4\beta,\qquad A_3=\frac{4G_p(h_1^3+h_2^3)}{3pp^3}$$

This equation may be used for the solution of problems relating to rubber-fabric and rubber-cord hose, both of which are widely

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S/179/60/000/006/028/036
E081/E135

Equilibrium of Rubber-Cord Cylindrical Shells

applied in technology. Discussion of the deformation of pneumatic tyres leads to the consideration of a cylindrical shell fixed along two generators, analogous to the fixing of a tyre on a wheel rim. In this case the boundary conditions are:

$$Z = \partial Z/\partial\varphi = \partial^2 Z/\partial\varphi^2 = \partial^3 Z/\partial\varphi^3 = 0$$

An erratum notice to an earlier paper (Ref.2) is included. There are 2 Soviet references.

SUBMITTED: June 13, 1960

Card 6/6

33398
S/572/60/000/006/016/018
D224/D304

10-7100 1327

AUTHOR: Biderman, V. L., Doctor of Technical Sciences

TITLE: On the propagation of waves of longitudinal deformation in the case of non-linear "rigid" relation between stresses and deformations

SOURCE: Raschety na prochnost'; teoreticheskiye i eksperimental'nyye issledovaniya prochnosti mashinostroitel'nykh konstruksiy. Sbornik statey. No. 6, Moscow, 1960, 254-266

TEXT: The author considers first the case of shock compression of cylindrical springs; the rigidity of the spring has then one value before the turns come into contact and a different one afterwards. The spring can be approximately replaced by a rod having the relation between stresses and deformations $\sigma = E\varepsilon$ for $\varepsilon < \varepsilon^*$ and $\sigma = \sigma^* + E_1(\varepsilon - \varepsilon^*)$ for $\varepsilon > \varepsilon^*$; E_1 being much larger than E. Wave equations

Card 1/2

On the propagation ...

for the domain of each equation are formulated. The difficulty consists only in finding the line of separation between the domains on the xt plane (which is the line of discontinuity of velocities and stresses.). Equations are deduced which permit investigation of the motion of the rod if the load is arbitrary. Two examples are considered: 1) Instantaneous application of a constant load to the end of a semi-infinite rod; 2) application of a linearly increasing load. Instantaneous loading with subsequent unloading, percussion of the end of semi-infinite rod by rigid weight, and a case of reflection of deformation wave are studied. The equations obtained determine the principal properties of waves under the conditions of the rigidity specified. It is stated that the possibility of replacing a spring by a rod must be studied experimentally. There are 8 figures and 3 Soviet-bloc references.

Card 2/2

S/572/60/000/006/018/018
D224/D304

AUTHORS: Biderman, V. L., Doctor of Technical Sciences, and Pugin, V. A., Engineer

TITLE: Experimental investigation of deformation in car tires

SOURCE: Raschety na prochnost'; teoreticheskiye i eksperimental'nyye issledovaniya prochnosti mashinostroitel'nykh konstruktsiy. Sbornik statey. No. 6, Moscow, 1960, 295-313

TEXT: The authors describe methods for measuring deformations in rubber cord car tires, using specially developed detectors and give graphs of distribution of deformations in tires obtained experimentally both in laboratory and in service conditions on the roads. The required range of deformations to be measured is approximately 0.1 to 25% with an accuracy up to 0.1%. Two types of tensometers were used. A Π-shaped bracket tensometer of thin steel with ordinary wire transmitters fixed on both sides is used only for measurements in static conditions. Later, transmitters were developed

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Experimental investigation of ... S/572/60/000/006/018/018
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which consist of rubber thread about 1 mm in diameter with a constantan wire winding. The characteristics of these are generally non-linear. A formula for their sensitivity is given and the method of their calibration described. The following subjects are treated: Deformations of rubber, deformations of cord threads, effects of concentrated forces, effects of internal pressure and static loads, investigation of deformations on the road. The authors state that the results obtained on the road must be taken into account when developing methods of laboratory tests. There are 23 figures and 6 references: 4 Soviet-bloc and 2 non-Soviet-bloc. The reference to the English-language publication reads as follows: D. Loughborough, V. Davies and G. Monfore, Canadian Journal of Research, 1950, 28, Sect. F.

Card 2/2

BIDERMAN, V.L. (Moskva); BUKHIN, B.L. (Moskva)

Calculating critical rolling speed of pneumatic tires. Izv. AN SSSR. Otd. tekh.nauk.Mekh. i mashinostr. no. 1:52-57 Ja-F '61. (MIRA 14:2)

(Tires, Rubber—Testing)

BIDERMAN, V.L., doktor tekhn.nauk

Critical speed of the rolling of a pneumatic tire. Rasch.na prochn. no.7:324-349 '61. (MIRA 14:11)
(Tires, Rubber--Testing)

BIDERMAN, V.L.; BUKHIN, B.L.

Methods for calculating stresses and strain in the elements of a pneumatic tire. Kauch.i rez. 20 no.3:15-20 Mr '61. (MIRA 14:3)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti.
(Tires, Rubber--Testing) (Strains and stresses)

AGAMIROV, V.L., kand. tekhn. nauk; AMEL'YANCHIK, A.V., inzh.; ANDREYEVA, L.Ye., kand. tekhn. nauk; BIDERMAN, V.L., doktor tekhn. nauk; BOYARSHINOV, S.V., kand. tekhn. nauk; VOL'MIR, A.S., prof., doktor tekhn. nauk; DIMENTBERG, F.M., doktor tekhn. nauk; KOSTYUK, A.G., kand. tekhn. nauk; MAKUSHIN, V.M., kand. tekhn. nauk; MASLOV, G.S., kand. tekhn. nauk; MALININ, N.N., prof., doktor tekhn. nauk; PONOMAREV, S.D., prof. doktor tekhn. nauk; PRIGOROVSKIY, N.I., prof., doktor tekhn. nauk; SERENSEN, S.V., akademik; STEPANOVA, V.S., inzh.; STRELYAYEV, V.S., inzh.; TRAPEZIN, I.I., prof., doktor tekhn. nauk; UMANSKIY, A.A., prof., doktor tekhn. nauk; FEODOS'YEV, V.I., prof., doktor tekhn. nauk; SHATALOV, K.T., doktor tekhn.nauk; YUMATOV, V.P., kand. tekhn. nauk; BLAGOSKLONOVA, N.Yu., red. izd-va; YEVSTRAT'YEV, A.I., red. izd-va; SOKOLOVA, T.F., tekhn. red.

[Manual for a mechanical engineer in six volumes] Spravochnik mashinistroitelia v shesti tomakh. Red. sovet N.S.Acherkan i dr. Izd.3., ispr. i dop. Moskva, Mashgiz. Vol.3. 1962. 651 p. (MIRA 15:4)

1. Akademiya nauk USSR (for Serensen).
(Machinery--Design)

SUKHOVA, N.A., inzh.; BIDERMAN, V.L., doktor tekhn.nauk

Designing rubber compression shock absorbers. Rasch.na prochn. no.8:200-211 '62. (MIRA 15:8)

(Shock absorbers)

BIDERMAN, V.L., doktor tekhn.nauk

Transverse vibrations of springs. Raseh.na prochn. no.8:256-270 '62. (MIRA 15:8)

(Springs (Mechanism)--Vibration)

BIDERMAN, Vadim L'vovich; GUSLITSER, Ruvim L'vovich; ZAKHAROV, Sergey Petrovich; MENAKHOV, Boris Viktorovich; SELEZNEV, Ivan Ivanovich; TSUKERBERG, Solomon Maksimovich; BUKHIN, B.L., red.; KOGAN, V.V., tekhn. red.

[Motor-vehicle tires; design, construction, testing, and operation] Avtomobil'nye shiny i konstruktsiia, raschet, ispytanie, ekspluatatsiia. [By] V.L.Biderman i dr. Moskva, Goskhimizdat, 1963. 382 p. (MIRA 16:12)
(Motor vehicles--Tires)

BIDERMAN, V.L., doktor tekhn.nauk; BUKHIN, B.L., kand. tekhn. nauk.

Calculating tires with meridional disposition of cord threads in the casing. Rasch. na prochn. no.9:34-47 '63 (MIRA 16:12)

BIDERMAN, V.L., doktor tekhn. nauk, prof.; SUKHOVA, N.A., inzh.

Designing rubber compression absorbers under large deformations. Izv. vys. ucheb. zav.; mashinostr. no.10:36-37 '63. (MIRA 17:3)

1. Moskovskoye vysshaye tekhnicheskoye uchilishche imeni Baumana.

BIDERMAN, V.L. (Moskva)

Helical spring with a rectangular cross section taken as a cylindrical shell. Izv.AN SSSR. Mekh. i mashinostr. no.4: 67-75 Jl-Ag '63. (MIRA 17:4)

BIDERMAN, V.L. (Moskva); SUKHOVA, N.A. (Moskva)

Approximate fulfillment of noncompressibility conditions in the solutions of problems in case of large deformations. Izv. AN SSSR. Mekh. i mashinostr. no.6:167-168 N-D '63. (MIRA 17:1)

BIDERMAN, V.L., doktor tekhn. nauk, prof.; MALYUKOVA, R.P., kand. tekhn. nauk

Stresses and deformations caused by a longitudinal impact. Rasch.na proch. no.10:261-306 '64. (MIRA 18:1)

[redacted], V.[redacted]; PUGIN, V.A.; FIL'KO, G.P.

Deformation and stresses in the rubber coating of the side strips of type "P" tires. Kauch. i rez. 24 no.7:15-17 Jl '65.
(MIRA 18:8)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti.

BIDERMAN, V.L.; ZHUKOV, A.D.

Design of rubber plate type shock absorbers. Kauch. i rez. 24 no.10:32-36 '65. (MIRA 18:10)

1. Moskovskoye vysshaye tekhnicheskoye uchilishche imeni N.E. Baumana.

BIDERMAN, V.L.; PUGIN, V.A.; FIL'KO, G.S.

Fatigue endurance characteristics of the rubber-cord tire structure. Kauch. i rez. 24 no.12:29-31 '65.

(MIRA 18:12)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti.

BIDERMAN, V.L., doktor tekhn.nauk, prof.

Elasticity and strength of anisotropic glass-reinforced plastics. Rasch. na prochn. no.11:3-30 '65.

(MIRA 19:1)

L 29824-66 EWT(d)/EWT(m)/EWP(w)/EWP(v)/EWP(k) IJP(c) WW/EM

ACC NR: AP6011132 SOURCE CODE: UR/0424/66/000/001/0081/0089

AUTHORS: Biderman, V. L. (Moscow); Bukhin, B. L. (Moscow)

ORG: none

TITLE: Equilibrium equations of a zero-spin reticular shell

SOURCE: Inzhenernyy zhurnal. Mekhanika tverdogo tela, no. 1, 1966, 81-89

TOPIC TAGS: shell theory, stress analysis, elastic deformation, deformation rate

ABSTRACT: The deformation mechanism of a reticular shell structure is investigated. The shell base consists of mutually intersecting flexible and elastic filaments with fixed nodes, filled with a material which does not resist deformation. Two types of calculation procedures are used. In the first case, the shell configuration and the filament stresses are determined from the equilibrium equations and the given geometric relationships. In the second case, for a given internal pressure loading, the equilibrium equations for the shell are solved, starting from a given initial state and considering the displacements of various points on the shell. The second method is analyzed in detail, and the resulting equilibrium equations compared with a derivation from energy conservation considerations. Orig. art. has: 36 equations and 2 figures.

SUB CODE: 20/ SUBM DATE: 06May65/ ORIG REF: 009/ OTH REF: 001

Card 1/1 FV

GRIGORASH, I., inzh.-podpolkovnik; BIDEVKIN, A., inzh.-mayor.

Re-equipped prime mover. Tankist no.1:48-50 Ja '58. (MIRA 11:3)
(Tractors)

BIDKOVA, L.M.; BURLYA, T.G.; YEPISHIN, N.P.; LADUT'KO, S.V.; SHCHERBINA, V.A.

Effect of bone marrow homotransfusions on the clinical course and biochemical changes in acute radiation sickness. Gemat. i perel. krovi 1:99-102 '65. (MIRA 18:10)

1. Vinnitskiy meditsinskiy institut.

DUKELSKY, V.M.; BIDIN, J.F.; BUKTEYEV, A.M.

"Ionization of High Velocity Alkali Atoms by Collisions with Atoms of the Inert Gases."

report presented at the 4th Intl Conference on Ionization Phenomena in Gases, Uppsala, 17-21 August 1959.

NOVOSELOV, Sergey Pavlovich; BIDINSKAYA, L., red.; MUKHIN, Yu., tekhn. red.

[The most effective force of the present time; the contemporary stage of the world communist movement]Samaia vliiatel'naia sila sovremennosti; mirovoe kommunisticheskoe dvizhenie na sovremennom etape. Moskva, Gospolitizdat, 1962. 78 p. (MIRA 15:10)

(Communism)

BIDLO, G.

"Examination of the Disintegration of Hungarian Andesites." p. 376,(FOLDTANI KOZLONY. BULLETIN OF THE HUNGRIAN GEOLOGICAL SOCIETY, Vol. 83, no. 10/12, Oct./Dec. 1953, Budapest, Hungary)

SO: Monthly List of East European Accessions, LC, Vol. 3, No. 5, May 1954/Unclassified

HIDLC, G.

X-ray analysis of the insoluble residue of some limestone from the Bükk Mountains. p. 350.

FOLDTANI KOZLONY. BULLETIN OF THE HUNGARIAN GEOLOGICAL SOCIETY, Budapest, Vol. 84, no. 4, Oct./Dec. 1954.

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, no. 10, Oct. 1955, Uncl.

Bida, G.

169. **Radiographical examination of Hungarian alunites** — G. Bida. (*Földtani Közlöny* — Vol. 85, 1955, No. 2, pp. 152—161, 8 tabs.)

The radiographical examination of the alunite formations occurring in Hungarian bauxite deposits has been executed by the Debye-Scherrer powder diagram process. The finely powdered substance examined by filtered copper radiation in a standard 57.8 mm dia chamber was used for photographing. The samples were taken at *Gánt*, *Iszkaszentgyörgy* and *Nyirád*. According to the chemical analysis the sample from *Gánt* proved to be alunitite, that from *Iszkaszentgyörgy* an isomorphic mixture of potassium alunite and sodium alunite whereas the sample from *Nyirád* was alunite contaminated by kaolin. For the sake of accuracy three photographs were made. The free sulphuric acid in the sample was eluted with water and alcohol, and the position of the lines on the photographs obtained in this manner were in good agreement with the values mentioned in literature. The interpretation and the comparison of the chemical analyses and of the photographs are illustrated in three tables each.

BIDLO, G.

Research on ristance to weather of phonolite from Hosszuheteny. p. 319

Vol. 85, no. 3, July/Sept. 1955

SOURCE: Monthly list of East European accessions, (EEAL), Lc, Vol. 5, No. 3, March 1956

BIDLO, G.

Data on the development of the chemical composition of groung water. p. 459

HIDROLOGIAL KOZLONY. Budapest, Hungary, Vol. 39, No. 6, Dec. 1959

Monthly List of East European Accessions (EEAI) LC, Vol. 9, No. 2, Feb. 1960
Uncl.

BIDLO, Gabor

The aragonite deposition at Balaton. Foldt kozl 90 no.2:224-225 Ap-Je '60. (EEAI 10:2)

1. Keszult az Epitoipari es Kozlekedesi Muszaki Egyetem Asvany es Foldtani tanszeken.
(Hungary--Aragonite)

BIDL), Gabor; TOROK, Endre, dr.

Mineralogical examination of the alluvium of the Marcal River.
Foldt kozl 93 no.2:244-247 Ap-Je '63.

BIDLO, Gabor

Data on the formation of the chemical composition of ground water. Hidrologiai kozlony 39 no.6:459-461 D'59.

1. Epitoipari es Kozlekedesi Muszaki Egyetem Asvany - es Foldtani Tanszeke.

NIKOLICS, Karoly; BIDLO, Gabor; NIKOLICS, Karolyne

Effect of solvents on the structure of crystals. Acta pharm. Hung. 35 no.4:152-157 Jl'65.

BIDLO, V.

"Best technology for our railroads." p. 253

ZELEZNICHI TECHNIKA. (Ministerstvo dopravy) Praha, Czechoslovakia Vol. 6, no. 10, Oct.1958

Monthly List of East European Accessions (EEAI) LC, Vol. 8, no. 6, June 1959

Uncl.

BIDLO, V.

Contemporary problems of our car classification technique.

P. 169 (Zeleznicni Technika) Vol. 5, No. 7, July 1957, Czechoslovakia

SO: MONTHLY INDEX OF EAST EUROPEAN ACCESSIONS (EEAI) LC. - VOL. 7, NO. 1, JAN. 1958

BIDLO, V.

The first scientific discussions of the graduation theses at the Railroad College.

P. 210 (Zeleznicni Technika) Vol. 5, No. 8, Aug. 1957, Czechoslovakia

SO: MONTHLY INDEX OF EAST EUROPEAN ACCESSIONS (EEAI) LC. - VOL. 7, NO. 1, JAN. 1958

[redacted]

[redacted], Zdenek, Inz.

Determining monovalent phenols by paper chromatography. Vodni hosp 14 no.8:291-292 '64.

BIDLO, Zd., inz.

Qualitative and quantitative determination of saccharides in water. Vodni hosp 14 no.5:190 '64.

BIDLO, Z., inz.

Determining beta napthol in technical sulfite and in waste waters from electrolytic nickel production. Vodni hosp 14 no.6:239-240 '64.

L 1221-66

ACCESSION NR: AP5025850 CZ/0008/65/059/005/0607/0608

AUTHOR: Bidlo, Zdenek 5

TITLE: Device for mechanical preparation of paper and for applying of samples on it in paper chromatographic practice

SOURCE: Chemicke listy, v. 59, no. 5, 1965, 607-608

TOPIC TAGS: paper chromatography, chemical laboratory apparatus

Abstract: The authors describe an auxiliary apparatus, which they designed for mechanical preparation of paper, and for sample application in paper chromatography. A detailed description of the apparatus is given, and operating instructions are offered. The apparatus as designed by the authors is suitable for Whatman papers No 1 and 4, and in a modified version for No 3. Orig. art. has 1 figure.

ASSOCIATION: Vyzkumny ustav vodohospodarsky, Prague-Podbaba (Research Institute for Hydrology)

SUBMITTED: 28Jun64 ENCL: 00 SUB CODE: GC
NO REF SOV: 000 OTHER: 000 JPRS
Card 1/1 mlb

BIDLO, Z.

"Vonasek, F. Aromatic substances made from pyrocatechol-heliotropin and benzodioxan derivatives. p. 589."

PRUMYSL POTRAVIN. Praha, Czechoslovakia. Vol. 9, no. 11, 1958.

Monthly list of East European Accessions (EEAI), LC, Vol. 8, No. 6, Jun 59 unclas

GABRIEL, J., MUDr.; NOVAKOVA, H., MUDr.; STRNAD, L., prom. ekonom.; GAISLER, J. MUDr.; BIDMAN, J., MUDr.; HORAK, Fr., Technicka spoluprace CERNA, V.

Study of a group of deseased patients in the University Hospital in Hradec Kralove for a 1-year period. Cesk. zdrav. 12 no.11: 543-555 N '64.

1. Katedra organizace zdravotnictvi lek. fak. Karlovy University a Krajsky ustav narodniho zdravi v Hradci Kralove za odborne spoluprace klinickych pracovniku.

BIDMAN, J., MUDr.; KEBORT, J., MUDr.

Agricultural injuries in the East-Bohemian region during 1961-1964. Cesk. zdrav. 13 no.12:618-625 D '65.

1. Krajsky ustav narodniho zdravi v Hradci Kralove.

SLOBODYANIK, I. [Slobodianyk, I.]; BIDNA, L., assistent

Lightweight concrete and heat insulating materials from agricultural wastes. Sil'.bud. 13 no.10:14 O '63. (MIRA 17:3)

1. Zaveduyushchiy kafedroy stroitel'nykh materialov Kiyevskogo inzhenerno-stroitel'nogo instituta (for Slobodyanik). 2. Kafedra stroitel'nykh materialov Poltavskogo inzhenerno-stroitel'nogo instituta (for Bidna).

SYSOYEV, L.A.; OBUKHOVSKIY, Ya.A.; BIDNAYA, D.S.

Cadmium sulfide crystallization from cadmium halide solutions.
Rost krist. 4:157-159 '64. (MIRA 17:8)

DIDNH YH, D.S.

Hydrogen bond and valency vibration frequency of carbonyl group. A. P. Lutskii and D. S. Bidnaya (Polytech. Inst., Kharkov). *Optika i Spektroskopiya* 2, 161–4 (1957).—Raman spectra of acetophenone *o*-, *m*-, and *p*-$HOC_6H_4COCH_3$, and *o*-, *m*-, and *p*-$CH_3OC_6H_4COCH_3$ and their solns. in C_6H_6, CCl_4, dioxane, acetone, $CHCl_3$, EtOH, and PhOH gave, resp., the following frequencies ($cm.^{-1}$) of carbonyl group: 1654, 1640, 1671, 1655, 1671, 1681, 1673; —, —, 1671, 1656, —, —, —; 1689, 1645, —, —, 1678, 1684, 1679; 1687, 1643, 1665, 1678, 1672, 1687, 1678; —, 1645, 1665, 1670, —, —, —; 1650, 1637, —, 1652, 1667, 1681, 1672; 1687, 1643, 1674, 1660, 1671, 1668, 1672; and 1697, 1697, 1660, 1655, —, 1670, 1657. The changes in the ▸(C:O) are discussed in the light of intra- and intermol. H-bond effect. 15 references.

A. P. Kotloby

PRIKHOT'KO, A.F

24(7) PHASE I BOOK EXPLOITATION SOV/1365

L'vov. Universytet

Materialy X Vsesoyuznogo soveshchaniya po spektroskopii. t. 1: Molekulyarnaya spektroskopiya (Papers of the 10th All-Union Conference on Spectroscopy. Vol. 1: Molecular Spectroscopy) [L'vov] Izd-vo L'vovskogo univ-ta, 1957. 499 p. 4,000 copies printed. (Series: Its: Fizychnyy zbirnyk, vyp. 3/8/)

Additional Sponsoring Agency: Akademiya nauk SSSR. Komissiya po spektroskopii. Ed.: Gezer, S.L.; Tech. Ed.: Saranyuk, T.V.; Editorial Board: Landsberg, G.S., Academician (Resp. Ed., Deceased), Neporent, B.S., Doctor of Physical and Mathematical Sciences, Fabelinskiy, I.L., Doctor of Physical and Mathematical Sciences, Fabrikant, V.A., Doctor of Physical and Mathematical Sciences, Kornitskiy, V.G., Candidate of Technical Sciences, Rayskiy, S.M., Candidate of Physical and Mathematical Sciences, Klimovskiy, L.K., Candidate of Physical and Mathematical Sciences, Milyanchuk, V.S., Candidate of Physical and Mathematical Sciences, and Glauberman, A. Ye., Candidate of Physical and Mathematical Sciences.

Card 1/30

Card 14/30

BIDNAYA, D.S.; OBUKHOVSKIY, Ya.A.; SYSOYEV, L.A.

Developing new methods for CdS crystal growing from solutions.
Zhur.neorg.khim. 7 no.12:2671-2673 D '62. (MIRA 16:2)
(Cadmium sulfide crystals)

L 12414-63 EWP(j)/EPF(c)/EWT(m)/ES(s)-2/BDS AFFTC/ASD/ESD-3/SSD
Pc-4/Pr-4/Pt-4 RM/WW

ACCESSION NR: AP3001408 S/0020/63/150/004/0833/0835

AUTHOR: Gel'fman, A. Ya.; Bidnaya, D. S.; Buravleva, M. G.; Luzan, R. G.

TITLE: Intermolecular structure and some electrophysical properties of polyvinyl alcohol

SOURCE: AN SSSR. Doklady, v. 150, no. 4, 1963, 833-835

TOPIC TAGS: polyvinyl alcohol, electrochemical properties

ABSTRACT: Attempts have been made to show correlation between the degree of alignment of polymeric molecules and the electrophysical properties of the polymer. Films of polyvinyl alcohol obtained by the usual method from water solution were used. It was found that there is no difference between the DELTA E for the films with various degrees of crystallinity, and also the molecular orientation has no effect on the value of DELTA E. Thus, according to the existing classification, polyvinyl alcohol can be included into organic semiconductors. Orig. art. has: 1 table, 2 figures, and 1 graph.

ASSOCIATION: All-Union Scientific-Research Inst. for Monocrystals and Ultra-Pure Chemical Substances

Card 1/2

ACCESSION NR: AT4040563 S/2564/64/004/000/0157/0159

AUTHOR: Sy*soyev, L.A.; Obukhovskiy, Ya. A.; Bidnaya, D. S.

TITLE: Crystallization of cadmium sulfide from solutions of cadmium halides

SOURCE: AN SSSR. Institut kristallografii. Rost kristallov, v. 4, 1964, 157-159

TOPIC TAGS: cadmium sulfide, cadmium halide, cadmium sulfide crystallization, cadmium halide eutectic

ABSTRACT: The observation that molten $CdCl_2$ dissolves ~30 wt. % of CdS at 800C was used by the authors as the basis for a study of the conditions for obtaining large and well-shaped crystals of CdS. Crystals 1.5 mm thick and 4 mm in diameter, with well-developed faces, were obtained from a $CdCl_2$-CdI_2 eutectic mixture (30% $CdCl_2$ - 70% CdI_2) which melts at 359C. The process was carried out in a resistance oven with programmed temperature reduction. A mixture of 8 wt. % CdS and 92 wt. % of the eutectic was heated at 670-680C for 3-4 hrs in a quartz ampule and cooled at rates of 50, 20 or 5 degrees/hr. A slower rate contributed to increased size and regular shape of the crystals. Orig. art. has: 3 figures.

Card 1/2

ACCESSION NR: AT4040563

ASSOCIATION: Institut kristallografii AN SSSR (Institute of Crystallography, AN SSSR)

SUBMITTED: 00 DATE ACQ: 02Jul64 ENCL: 00

SUB CODE: SS,IC NO REF SOV: 001 OTHER: 000

Card 2/2

I 22217-65 EWT(m)/EPF(c)/T/EWP(j)/EPR Pc-4/Pr-4/Ps-4 ASDA-5/Pa-4/ASDM-3
ASMP-2/AFETR WW/RM

ACCESSION NR: AP4012975 S/0020/64/154/004/0894/0896

AUTHOR: Gel'fman, A. Ya.; Bidnaya, D. S.; Sigalova, L. V.; Buravleva, M. G.; Kobe, V. S.

TITLE: Electric conductivity and conjugated double bonds in pyrolysis products of polyvinyl alcohol

SOURCE: AN SSSR. Doklady, v. 154, no. 4, 1964, 894-896, and top half of insert facing page 894

TOPIC TAGS: polyvinyl alcohol, pyrolysis, pyrolysis product , electric conductivity, polymer pyrolysis product, polymer, conjugated double bond, crystallinity, amorphous structure, electric resistance, activation energy, conjugated double bond system, conjugated bond

ABSTRACT: The IR-spectra and x-ray patterns of the pyrolysis products of polyvinyl alcohol were studied to test the hypothesis that the increased electric conductivity and lowered activation energy of pyrolysis products of polymers is associated with the formation of a system of conjugated double bonds. Pyrolysis of polyvinyl alcohol was conducted in a slow stream of air, nitrogen, or argon for 3

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L 21217-65

ACCESSION NR: AP4012975

hours at 200--800C. It was found that polyvinyl alcohol undergoes a change in molecular structure at 300C. The maximum concentration of aliphatic conjugated double bonds, minimum crystallinity, and maximum electric conductivity appear both in air and inert gas at 300C. Pyrolysis at higher temperatures increases conductivity markedly and lowers activation energy, apparently as a result of the formation of "carbon structures" (segments of large, highly unsaturated aromatic molecules) and an increase in their number rather than because of an increase in the number of double bonds. The maximum resistivity and activation energy of 300C pyrolysis products is apparently associated with the complete breakdown of the original polyvinyl alcohol and disappearance of hydrogen bonding before any carbon structures are formed. Orig. art. has: 4 figures and 1 table.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut monokristallov, stsintillyatsionnykh materialov i osobo chistykh khimicheskikh veshchestv (All-Union Scientific Research Institute of Single Crystals, Scintillization Materials, and High Purity Chemical Substances)

SUBMITTED: 26Sep63 ENCL: 00 SUB CODE: OC, GC

NO REF SOV: 005 OTHER: 005

Card 2/2

ALEKSEYEV, B.D.; ALAVERDOV, A.I.; BABIN, I.D.; BIDNEY, A.I.; BUROVOY, I.A.; GUSOV, A.V.; IVANOV, V.I.; KAYDAK, A.M.; LEYZEROVICH, G.Ya.; KUPPUL', V.K.; SEREBRYANNIKOV, E.Ya.; SHTEYNGARDT, G.M.

Roasting zinc concentrate in a gas fired boiling fuel bed. Prom. energ. 13 no.8:19-20 Ag '58. (MIRA 11:10)
(Zinc--Metallurgy)

BIDNYATSKIY, N.M., kand. tekhn. nauk

Principles of the calculation of the oscillations of damped wires.
Izv. vys. ucheb. zav.; energ. 7 no.9:[illegible] 1964.
(MIRA [illegible])

1. Leningradskiy elektrotekhnicheskiy institut imeni V.I. Ul'yanova (Lenina). Predstavlena kafedroy teoreticheskikh osnov elektrotekhniki.

BIDNYY, G.

BIDNYY, G., inzhener (Kishenev)

Using highly durable wire in the category of waste materials.
Gor. i sel'stroi. no.6:24-25 Je '57. (MIRA 10:10)
(Reinforced concrete)

BABUSHKINA, M., inzh.; RIDNYY, G., inzh. (Kishinev)

"VMN-1600" vibration mill. Gor.i sel.stroi. no.8/9:25 Ag-S '57.
(MIRA 10:12)
(Crushing machinery)

SOV/97-58-11-8/11

AUTHORS: Babushkina, M.I. and ~~Bidnyy, O.K.~~ (Engineers)

TITLE: The Effect of Vibro-grinding of Cement in an Aqueous Medium on the Speed of Hardening and the Strength of Concrete (Vliyaniye vibrodomola tsementa v vodnoy srede na skorost' tverdeniya i prochnost' betonov).

PERIODICAL: Beton i Zhelezobeton, 1958, Nr.11, pp.432-434 (USSR)

ABSTRACT: Cement activated in an aqueous medium acquires high quality properties and rapid hardening with a limit of strength in compression of 500-720 kg/cm^2 instead of 395 kg/cm^2. This activated cement (time of re-grinding 15 mins.) has the following increase in strength in comparison with ordinary concrete after 28 days of hardening: after 24 hrs. - 50%; after 3 days - 120%. Wet activation of cement shortens the time of hardening. Introduction of Tripoli (rotten-stone) during activation of cement effects 15-20% saving of cement. Mixing ordinary and activated cements results in increased strengths corresponding to the proportion of each type of cement. This wet grinding of cement was used and tested in the Combine of Industrial

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SOV/97-58-11-8/11

The Effect of Vibro-grinding of Cement in an Aqueous Medium on the Speed of Hardening and the Strength of Concrete.

Undertakings of the Directorate of Building of the Sovnarkhoz of the Moldavian SSR (Kombinat proizvodstvennykh predpriyatiy Upravleniya stroitel'stva sovnarkhoza Moldavskoy SSR). The vibro-grinding machine used, type VMN-400, has continuous worm-feeding, dosing installation, water tank and suction installation. Its capacity is 425 l.; frequency of vibration 3000/min., and amplitude of vibration 1.8-2 mm. The basic material is portland cement of strength 470 kg/cm^2. The concrete aggregate consists of sand and gravel with a limit of strength of 300-400 kg/cm^2. The proportion of the concrete mix is 1 : 2.15 : 3.35. 330 kg. cement is used for 1 m^3 of concrete. Other mixes of various water/cement ratios are investigated and their effect on the concrete is described. Table 1 gives values of the strength of concrete made from the various water/cement ratios. Table 2 gives values of reduction of time of hardening for wet activated cement. An increase in the strength of concrete by 146% can be achieved by adding $CaCl_2$ to the re-ground cement. This increase corresponds

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The Effect of Vibro-grinding of Cement in an Aqueous Medium on the Speed of Hardening and the Strength of Concrete.

to 245% if compared with concrete made with ordinary cement. Similarly when NaCl is added the increase in strength in the first case is 151% and in the second case 253%. Tests were also carried out with concrete made from activated cement with Tripoli (rotten-stone) added. When 15-20% (by weight of cement) of Tripoli was added the strength of the concrete was the same as of concrete made from ordinary cement, and a saving of 15-20% of cement can thus be achieved by the addition of Tripoli. Table 3 gives values for partial activation of cement and the corresponding strengths of the concrete. There are 3 tables.

BIDOS, S.

Electric power stations

Operation of an MTS electric power station
Tekhsov, MTS, 13, no. 27-28, 1952

BIDOVIC, Franc

Characteristics of water; their outline in hydrologic reviews and publications. Vodoprivreda Jug 2 no.4/5:31-38 '59. (EEAI 9:10)
(Yugoslavia--Water)

BILOVEC, Franc (Podmliscakova 25, Ljubljana)

How to arrive at better hydrologic bases. Vodoprivreda Jug 2 no.4/5: 26-31 '59. (EEAI 9:10)

1. Nacelnik hidroloskog oddela Hidrometeoroloskego zavoda LRS, Ljubljana.
(Yugoslavia--Water)

BIDOVEC, Franc

Empirical formulas for calculating water quantities compared with the actual quantity of water in streams of the Slovenian Alpic region. Vodoprivreda Jug 3 no.12:3-16 '60. (EEAI 10:9)

(Water)